5. OCCUPATIONAL DOSES TO SAVANNAH RIVER PLANT EMPLOYEES*

It is the policy of ERDA and its contractors to assure that occupational radiation exposure information is developed and maintained for all individuals exposed to ionizing radiation while engaged in activities associated with ERDA or ERDA contract operations.[24] In order to ensure that such data is developed, all personnel are assigned personnel monitoring devices if they enter or work in controlled areas that have a radiation exposure potential. Permanent records of occupational radiation exposure are maintained in ERDA's Radiation Record Repository.

Occupational radiation exposure guides at SRP are 3 rems each year to the whole body and/or 3 rems each calendar quarter. This is within the radiation protection standard of 5 rems to the whole body each year and/or 3 rems each calendar quarter established by ERDA.[2] A summary of SRP occupational dose for the period 1965 through 1975 is shown in Table III-16.

The annual average dose per monitored employee ranged from 0.22 to 0.59 rem for the period. The maximum individual dose ranged from 2.7 to 3.7 with the exception of a single apparent dose of 24.8 rem to an employee in 1971 that was not substantiated in follow-up investigations.

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* The health and mortality study of employees of ERDA contractors provides a comparison of radiation worker groups and their siblings with respect to longevity and cause of death. The study concludes that to date the gross analysis of relative longevity of employees exposed to external radiation has given no indication of any general adverse effect within the time span currently available. However, the data do not warrant concluding that in the future some adverse effects may not become evident. Additional studies aimed at detecting any biological effects of radiation doses occupationally received at selected ERDA facilities were started in FY-1976. The emphasis of these studies is to search for deleterious effects in the definitive class of occupationally exposed workers who have received the higher exposures. Recently, an advisory committee recommended procedures for incorporationg exposure data from internally deposited radionuclides into the individual worker's exposure estimate. Programs of certification of radiation exposure values for all Oak Ridge employees and of ascertainment of date and cause of death on that population are now in progress. Personnel and radiation data collection are scheduled for early completion at Mound Laboratories.

It is the continuing goal at SRP to reduce radiation doses to plant employees to "as-low-as-practical" levels. This is accomplished by numerous operating procedures, job plans, etc. that contain detailed instructions pertinent to the control and reduction of personnel exposure. Monthly exposure summaries are reviewed by supervision to identify trends and problem areas. As a result of these reviews, operating procedures are revised for optimum control.

TABLE III-16

SRP Whole Body Occupational Dose

Year	*Number of Employees Monitored*	*Total Dose, rem*	*Average Dose per Monitored Employee, rem*	*Maximum Individual Exposure, rem*
1965	4977	2340	0.47	2.9
1966	5032	2074	0.41	3.4
1967	5041	2604	0.52	3.0
1968	4875	2412	0.49	3.3
1969	4705	2758	0.59	3.2
1970	4626	2353	0.51	3.7
1971	4836	2401	0.50	3.3 (24.8)
1972	5210	1711	0.33	3.4
1973	5005	1488	0.30	2.7
1974	5138	1367	0.27	3.1
1975	5263	1161	0.22	2.7